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Profitability and accountability of South Asian microfinance institutions (MFIs)

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Abstract: This study aims are measure the profitability and compare the profitability and accountability of microfinance institutions (MFIs) in South Asia. This study adopted a quantitative research approach using secondary data of six MFIs from six countries of South Asia from 2008 to 2012. The data were collected from the Microfinance Information Exchange database. We employed financial ratio analysis, descriptive statistical analysis, and the econometric technique, considered the various performance indicators that have been standardized by the Consultative Group to Assist the Poor to measure the financial performance or the profitability of MFIs. Results showed that yield on gross loan portfolio and the number of active borrowers has significant positive effects, conversely, ages and operating expense ratio have significant negative effects on financial performance. Liquidity ratio has been shown as insignificant, but a positive relationship and cost per borrower was found to have no relationship with the profitability of MFIs. Thus, the study suggests reconsidering the interest rate charged by MFIs as this is one of the major barrier for client's loan repayment. MFIs should also maintain close relationship with borrower to keep them active, for instead, institutions can provide deposits or sevings scheme for clients. However, some countries might have regulatory framework that unauthorized deposits service from borrowers.

Key words: Microfinance; Financial performance; Profitability; Accountability; Sustainability; South Asia

1. Introduction

In 1970s Microfinance program has introduced in Bangladesh to provide financial access to rural demography that was ignored by the commercial bank. Since that it has implemented in various less developed and developing countries as the most sophisticated development tools and mechanism against poverty alleviation (Morduch and Haley, 2002). MFIs have achieved significant success in financial inclusion and social development though it is consider as an informal financial institution. Therefore formal financial service provider has launched the micro-credit lending in various names (i.e. Rural Development Scheme or RDS of Islamic Bank Bangladesh Limited). Eventually Microfinance ideology has been recognized by Nobel Committee by granting the Nobel Peace Prize 2006 to the introducer of the Micro-credit method Professor Muhammad Yunus and his Grameen Bank.

Professor Yunus was determined to his idea therefore he didn't stop by establishing Grameen Bank, he further spread its coverage to the globe, 37 different nations have adopted the Grameen group lending model and has able to create more than $8.7 billion in loan since 1976 (Bruton et al., 2011). Moreover this methodology of micro-lending has expanded by 3350 Microfinance Institutions and served more than 154.8 million clients worldwide (Ahlin et al., 2011). However microfinance institutions came out with dual objectives: (1) achieving financial performance (ssustainability) (2) creating social impact (outreach) (Hartarska and Nadolnyak, 2007). Microfinance institutions therefore dealing with poverty alleviation through micro-lending (Bank, 2000) and involved female borrower in entrepreneurial development in rural societies. Therefore MFIs need major capital to cover various informal costs to reach out the poorest (one of the objective). Great concern of MFI's sustainability has arisen there.

Usually MFI depends on external subsidiary to manage its extensive operating cost but for being sustainable financially this dependency might not work (Tucker and Miles, 2004). More than US $ 1 billion per year has received by MFIs in donation from both govt. and private sector in last 20 years (CGAP, 2005). However about 5% of global MFIs found working efficiently without external subsidies conversely rest of them extremely depend on it to operate effectively (UNCDF, 2005). These subsidies also provided in various form (i) direct (i.e. cash, donations) (ii) indirect (i.e. asset, soft-skill, training, technology). Armendariz and Morduch argued that beyond mentioned form there few more forms (i.e. tax holidays, loan guarantees, soft equity, or public goods) of subsidies also have practiced but this information might not place open to the data collector (Armendariz and Morduch, 2005). However in a previous study Morduch identified this huge

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adjustment difference where he calculated the total direct and indirect subsidies of Grameen Bank for 1985-1996 was US$ 144 million while it was reported only US$ 1.5 million (Morduch, 1999).

Such comprehensive donor dependency of MFIs has raised several arguments on sustainability and efficiency of MFIs. Hollis and Sweetman addressed that financial sustainability of MFIs is very important matter that should be examined keep MFIs sustainable (Hollis and Sweetman, 1998). Financial performance which is one of the objective of MFI defined as the ability to cover all operational cost with its generated revenue and also able to finance future growth from that (Ayayi and Sene, 2010). Lack of these capabilities are some reasons why MFIs that are strongly dependent on external subsidies generally less sustainable and efficient (Rhyne, 1998). Various study found number of active borrowers enhance the deposit scheme and internal cash flow, which brings financial sustainability in MFIs. Therefore, MFIs should practice offering transparent and competitive interest rates to allow their borrowers to enhance financial performance continuously (Acclassato, 2008).

South Asia is the region where microfinance has born and developed dramatically. This region usually consider as developing nation's region and high percentage of demography here yet living under poverty line. Maintaining MFIs in rural areas produces higher financial performance (Epstein and Yuthas, 2013); although many MFIs including NGOs in this region are facing significant sustainability issue. Qayyum and Ahmad identified that MFIs in South Asia require developing managerial skills and enhancing the use of technology to limit its donor dependency (Qayyum and Ahmad, 2006). The country-level context also influences the success of MFIs (Ahlin et al., 2011). The success of an MFI in one country may not be a general trend. Moreover financial performance of MFIs also largely depend on government roles and implemented economic policies (Al Atoom and Abu Zerr, 2012).

There are limited studies have been conducted to determine the determinants affect financial performance of MFIs. However, it is important to note that the sustainability indicators that were used in previous studies vary among countries. In addition, research conducted on South Asian MFIs that aimed to measure their comparative overview in terms of the financial performance in the region has been minimal. This study therefore addresses this gap from an empirical standpoint by presenting a comparative outcome of the profitability and accountability of MFIs in South Asia and augmenting their functionality.

2. Literature review

(Acclassato, 2008) revealed that interest rate ceilings do not protect small businesses. In actual practice, interest rate ceilings damage microfinance institutions. The findings also mentioned that microfinance institutions need to price loans in a realistic way to be sustainable and to reach a large number of clients. The study has recommended the promotion of transparency on interest rates to stimulate competition among MFIs as a way of protecting borrowers. Moreover, the financial performance of MFIs is based on the capability to meet all costs on an adjusted basis and alludes to the use of the institution's own available sources in operating without on-going subsidies from donors or losses (Guntz, 2011).

Furthermore, a different examination by Agbodjan on the results of the prudential regulations showed that the non-observance of some "prudential ratios" by MFIs did not adversely affect their financial and organizational performance. Moreover, in view of the very strong correlation between the sustainability and the profitability of these institutions, the recommended strategy should consist of the removal of the framing of lending rates to make these neighbourhood credit institutions more profitable (Agbodjan, 2002). In addition, the cost efficiency of MFIs is affected by average loan size, proportion of net assets, financial sufficiency, financial leverage, business experience, and proportion of farm loans (Gregoire and Ramírez Tuya, 2006).

In 2012, Kinde showed that the financial sustainability of Ethiopian MFIs has been affected by the breadth and depth of outreach, dependency ratio, and cost per borrower. He has also concluded that during the study periods, the microfinance capital structure and staff productivity have insignificant effects on the financial performance of MFIs in Ethiopia (Kinde, 2012). Thapa (2007) showed that MFIs are considered as financially self-contained if their operating incomes are able to sustain all loan losses, administrative costs, and financing costs after synthesizing inflation rates and subsidies from donors and treating all funding as if it had a commercial cost.

The FSS of MFIs depends on the performance of the return on assets (ROA) and return on equity (ROE) (Tucker and Miles, 2004). The authors concluded that providing financial service to the poor is an expensive proposition, which can be a deterrent for numerous MFIs to reach self-sufficiency, and may require them to acquire continued subsidies. The cost argument has an important flaw: client retention, which is a critical aspect of financial accountability and a key measure of social influence, is significantly higher in rural markets (Epstein and Yuthas, 2013). The study suggested that by operating in rural markets, MFIs may be able to increase both social influence and financial performance. However, in a different study, the authors asserted that MFIs can significantly improve their financial accountability and social influence by increasing the focus on trust (Epstein and Yuthas, 2011).

Without maximizing the loan size and increasing the cost of monitoring, the difficulties to meet expenses on partial unsecured and small loan can be covered. Therefore to develop better financial

situation MFIs should improve the policy to standardize interest rate threshold or maximize the number of borrower per loan office based on collective delivery method (De Crombrugghe et al., 2008). MFIs operate primarily in nations with a relatively minimum degree of overall economic independence and where government intervention in the economy can reduce their sustainability (Crabb, 2008). His observation has resolved the issue with regard to how remarkable is the economic environment in host countries where MFIs operate as a factor in their ability to reach their goal.

Al Atoom and Abu Zerr, (2012) conducted three phases of analysis: taking four financial factors of financial performance, introducing the countries' macroeconomic regime factors, and integrating both micro- and macro-factors together. Results showed that Jordanian MFIs have more financial sustainability than those of other Arab and Asian countries. Moreover, these MFIs have less significant effect on the financial performance of the world's MFIs Their study recommended that the government should improve the macroeconomic regime policies, financial policies, and monetary policies to help MFIs achieve sustainability. This recommendation finds support in the observation that the country-level context is an important determinant of performance of microfinance institutions and a continues defects for the environment where it has pointed (Ahlin, et al., 2011).

Profit margin, operational self-sufficiency (OSS), ROA, and gross loan portfolio-to-total asset ratio considerably affect the other components by establishing the financial performance dimension (Anduanbessa, 2009). Borrowers' outreach is growing as evidenced by the opening of branches in almost all regions of Tanzania; nevertheless, landing activities are still brought to around city areas (Chijoriga, 2000). His study concluded that operational performance demonstrates less loan repayment rates. Conversely, capital structure reveals a high dependence on donor or government subsidy. Moreover profitability increases through well mechanisms practice of external governance in microfinance institutions (Bassem, 2009). The study also proposed that other factors, such as regulation and the use of the individual lending methodology, can lead to sustainability.

Interest rates, administrative efficiency, loan officer productivity, and staff salaries are significant determinants of FSS, but staff productivity measures and institutional scale are unrelated to FSS (Woller and Schreiner, 2002). The study found a statistically significant and positive relationship between FSS and depth of outreach. However, earning profits is possible while serving the poor, but a trade-off emerges between profitability and serving the poorest (Cull and Morduch, 2007). They concluded that raising fees to extremely high levels does not ensure higher profitability, and the benefits of cost-cutting diminish when serving better-off customers.

3. Methodology

The present study used descriptive, statistical, and financial ratio analysis techniques based on the secondary data of selected MFIs from South Asian countries. The secondary data of all the selected MFIs in South Asia for the period from 2008 to 2012 were extracted from the prominent microfinance online database Microfinance Information eXchange (MIX). Six MFIs were selected from six countries of the South Asian region. This study focused on NGOs of the region. The selection of MFIs was based on the highest number of active borrower (clients) in the six selected countries. The MFIs chosen for this study are listed in Table 1. We excluded the analysis of FSS of MFIs in Bhutan and Maldives because of the lack of data from these countries.

Table 1: Selected MFIs from South Asia

Country	Name of Institution	Current Legal Status
Bangladesh	Bangladesh Rural Advancement Committee (now known as Building Resources Across Communities) BRAC	NGO
Afghanistan	BRAC Afghanistan	NGO
Sri Lanka	BRAC Lanka (Guarantee) Limited	NGO
Nepal	Jeevan Bikas Samaj (JBS)	NGO
Pakistan	National Rural Support Programme (NRSP)	NGO
India	Shri Kshethra Dharmasthala Rural Development Project (SKDRDP)	NGO

The performance indicators that were used in the current study, namely, ROA, ROE, and OSS were adopted from an earlier study (Bhuiyan et al., 2011). Moreover, the present study relied on the observation that the FSS of MFIs depends on the performance of ROA and ROE (Tucker and Miles, 2004). The indicators that were used comply with the standardized measure of MFI performance as suggested by the guidelines of the Consultative Group to Assist the Poor (CGAP, 2003). Both sustainability and outreach performance can be determined combined through these indicators. The items and the formula for each indicator are listed in the next section.

ROE indicates the profitability of the institution. For many investors, ROE is of paramount importance because it helps investors to analyse their return on what they invested in the firm. However, a large number of MFIs are non-profit organizations; thus, to understand the commercial viability of those NGOs investors look into ROE as a proxy. ROA presents the overall profitability scenario of firms where it also reveals firm's average efficiency and marginal profit level. Simply defined, ROA measures

the precise use of institutional assets. OSS measures the capacity of an MFI in covering its costs through operating revenues. Financial self-sufficiency measures the same capacity while taking into account a number of adjustments to operating revenues and expenses (Table 2).

Table 2: Financial performance measurement indicators and ratios

financial self-sufficiency (performance)	
Return on Assets	$\frac{\text{(Net Operating Income } - \text{ Taxes)}}{\text{Average Total Assets}}$
Return on Equity	$\frac{\text{(Net Operating Income } - \text{ Taxes)}}{\text{Average Total Equity}}$
Operational Self-Sufficiency	$\frac{\text{Financial Revenue}}{\text{(Financial Expense + Net Impairment Loss + Operating Expense)}}$

The capital to asset ratio is the percentage of the assets of MFIs as represented by the capital. The debt to equity ratio is the simplest and most well-known measure of capital adequacy because it measures the overall leverage of the institution. Gross loan portfolio refers to total principles outstanding for the total outstanding client loans. It also included all delinquent and restructured loans with current loan, but excluding loans that have been written off (Table 3).

Table 3: Financing structure measurement indicators and ratios

financing structure	
Capital to Asset (%)	$\frac{\text{Total Equity}}{\text{Total Assets}}$
Debt to Equity (%)	$\frac{\text{Total Liabilities}}{\text{Total Equity}}$
Deposit to Loans (%)	$\frac{\text{Deposits}}{\text{Gross Loan Portfolio}}$
Deposits to Total Assets (%)	$\frac{\text{Deposits}}{\text{Total Assets}}$
Gross Loan Portfolio to Assets (%)	$\frac{\text{Gross Loan Portfolio}}{\text{Total Assets}}$

Furthermore, multiple regression models have been used to measure the FSS of microfinance institutions in the South Asian region. Six measures, which have been used to measure the predictor variables of FSS , were identified and adopted as independent variables (Woldeyes, 2012). These variables are Age of MFI, Cost per Borrower, Liquidity Ratio, Number of Active Borrowers, Operating Expense Ratio, and Yield on Gross loan Portfolio (Nominal) (Tables 4 and 5).

Table 4: Description of dependent variables

Financial Self-sufficiency (FSS)	$\frac{\text{Adjusted financial revenue}}{\text{(Financial expense + Loan loss provision + Operating expenses + Expense adjustment)}}$

Table 5: Description of Independent variables

S.N	Variables Standard Name	Description	Variable name in regression model
1	Age of MFIs	Age of MFIs since their establishment	AGE
2	Cost Per Borrower	Adj. Operating Expense/Adj. Av. No. of Active Borrowers	CPB
3	Liquidity Ratio	The ratio of current assets to current liabilities	LR
4	Number of Active Borrowers	Number of active borrowers with loans outstanding	NAB
5	Operating Expense Ratio	The ratio of operating expense to the gross loan portfolio	OER
6	Yield on Gross loan Portfolio (Nominal)	Adjusted financial revenue from Loan Portfolio/Adj. average GLP	YIELD

Regression model for financial self-sufficiency (FSS)

$FSS_{it} = \alpha_i + \beta_1 AGE_{it} + \beta_2 CPB_{it} + \beta_3 LR_{it} + \beta_4 NAB_{it} + \beta_5 OER_{it} + \beta_6 YIELD_{it} + \varepsilon_{it}$

where FSS_{it} is the FSS ratio of MFI i at time t (the dependent variable), α_i is a constant term, β measures the partial effect of independent or explanatory variables in period t for the unit i (MFI), X_{it} represents the explanatory variables as described in the abovementioned table, and ε_{it} is the error term. The variables, both dependent and independent, denote cross-section unit i at time t, where i = MFI (1 to n), and t = 1 to 5.

4. Results and discussion

4.1. Financial performance of MFIs

4.1.1. Financial performance of BRAC

Table 6 shows the FSS allocation for BRAC of Bangladesh from 2008 to 2012. The results of data analysis indicate slight fluctuations throughout the mentioned period. The average values for ROA, ROE, and OSS are 0.0376, 0.1503, and 1.1806, respectively. A general upward trend was observed from 2008 to 2012, except for a decline on ROE in 2011, which was surpassed by the ratio of the following year.

Table 6: Financial performance allocation of BRAC

Element	Year					Average
	2008	2009	2010	2011	2012	
Return on assets	0.0233	0.0367	0.0392	0.0305	0.0581	0.0376
Return on equity	0.1120	0.1632	0.1527	0.1114	0.2122	0.1503
Operational self-sufficiency	1.1065	1.1642	1.1876	1.1459	1.2990	1.1806

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.1.2. Financial performance of BRAC–AFG

Table 7 shows the FSS allocation of BRAC–AFG of Afghanistan from 2008 to 2012. The data analysis shows fluctuations throughout the study period, and positive improvement is observed in both ROA and ROE. The ratios of the average values of ROA, ROE, and OSS are (-0.0274), (-2.1963), and 0.9048, respectively. Although both ROA and ROE have negative values, they have shown an increasing trend throughout the study period. The data in the period from 2008 to 2010 were analyzed because of the unavailablity of 2011 and 2012 data for this MFI in the Microfinance Information eXchange (MIX) market database.

Table 7: Financial performance allocation of BRAC–AFG

Element	Year			Average
	2008	2009	2010	
Return on assets	-0.042	-0.0307	-0.0095	-0.0274
Return on equity	-4.4525	-1.9869	-0.1494	-2.1963
Operational self-sufficiency	0.8474	0.9055	0.9615	0.9048

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.1.3. Financial performance of BRAC–LKA

The FSS allocation of BRAC–LKA of Sri Lanka from 2008 to 2012 is shown in Table 8. The results of data analysis confirm the presence of minimal fluctuations throughout the period under investigation. The average values of ROA, ROE, and OSS ratios are found to be 0.0191, 0.1905, and 1.1396, respectively. Both upward and downward trends were present in all the study years, whereas noticeably, the performance of year 2010 was better compared with those of the others.

Table 8: Financial performance allocation of BRAC–LKA

Element	Year					Average
	2008	2009	2010	2011	2012	
Return on assets	-0.0490	0.0217	0.0643	0.0308	0.0278	0.0191
Return on equity	0.5102	0.1158	0.1770	0.0827	0.0666	0.1905
Operational self-sufficiency	0.8371	1.0995	1.3268	1.1928	1.2417	1.1396

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.1.4. Financial performance of JBS

The FSS allocation of JBS of Nepal for the period from 2008 to 2012 is presented in Table 9. The results of data analysis point out trivial fluctuations that declined continuously throughout the study period. The derived ratio of the average value of ROA is 0.0466, whereas the generated corresponding average values of ROE and OSS are 0.5307 and 1.3080, respectively. Only ROA had slightly recovered at the end of 2011. The data from 2008 to 2011 were analyzed because of the lack of data for the year 2012 for this MFI in the source database.

4.1.5. Financial performance of NRSP

The allocation of FSS of the NRSP of Pakistan from 2008 to 2012 is shown in Table 10. The outcome of data analysis reveals instability in FSS during the study period. The average values of ROA, ROE, and OSS ratios are 0.0270, 0.1762, and 1.1276, respectively. Although both upward and downward trends are observed from data analysis, the year 2010 showed better financial performance than the others. The year 2012 was omitted because data for that year were unavailable in the source database. Therefore, data from 2008 to 2011 were analyzed.

Table 9: Financial performance allocation of JBS

Element	Year				Average
	2008	2009	2010	2011	
Return on assets	0.0620	0.0393	0.0419	0.0431	0.0466
Return on equity	0.8179	0.4837	0.4384	0.3827	0.5307
Operational self-sufficiency	1.4090	1.2858	1.2747	1.2626	1.3080

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

Table 10: Financial performance allocation of NRSP

Element	Year				Average
	2008	2009	2010	2011	
Return on assets	0.0056	0.0231	0.0562	0.0231	0.0270
Return on equity	0.0514	0.1633	0.3627	0.1272	0.1762
Operational self-sufficiency	1.0273	1.0995	1.2645	1.1190	1.1276

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.1.6. Financial performance of SKDRDP

Table 11 depicts the FSS allocation of Shri Kshethra Dharmasthala Rural Development Project (SKDRDP) in India from 2008 to 2012. The results indicate slight upward and downward fluctuations throughout the investigation period. However, a positive improvement is reflected by the end of 2012. ROA produced an average value of 0.0132, ROE generated an average value of 0.3742, and, OSS yielded an average value of 1.1162. Compared with the previous observations, the year 2010 showed lower returns. Other than the ratio from this year, all ratios showed increasing trends during the study period.

Table 11: Financial performance allocation of SKDRDP

Element	Year					Average
	2008	2009	2010	2011	2012	
Return on assets	0.0015	0.0129	0.0103	0.0156	0.0255	0.0132
Return on equity	0.0412	0.3006	0.1994	0.6333	0.6966	0.3742
Operational self-sufficiency	1.0134	1.1270	1.1159	1.1197	1.2048	1.1162

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.1.7. Comparison of financial performance of MFIs in South Asian region

Based on the comparison of financial performances among MFIs in South Asian countries, the average values of ROA for the NGOs BRAC, BRAC–AFG, BRAC–LKA, JBS, NRSP, and SKDRDP were determined to be 0.0376, (-0.0274), 0.0191, 0.0466, 0.0270, and 0.0132, respectively. The comparison also shows that JBS of Nepal yielded the highest ROA (0.0466), and BRAC–AFG of Afghanistan yielded the lowest ROA (-0.0274). Conversely, the average values of ROE for BRAC, BRAC–AFG, BRAC–LKA, JBS, NRSP, and SKDRDP are 0.1503, (-2.1963), 0.1905, 0.5307, 0.1762, and 0.3742, respectively. JBS of Nepal gained the highest ROE (0.5307), whereas BRAC–AFG recorded the lowest ROE (-2.1963). Furthermore, among selected MFIs, only BRAC–AFG of Afghanistan yielded a negative ROA and ROE at (-0.0274) and (-2.1963). Moreover, the abovementioned comparison also showed the OSS of MFIs in the selected South Asian countries. The average values of OSS of BRAC, BRAC–AFG, BRAC–LKA, JBS, NRSP, and SKDRDP are 1.1806, 0.9048, 1.1396, 1.3080, 1.1276, and 1.1162, respectively. Table 9 shows that JBS has the highest OSS compared with other MFIs in South Asia, whereas the self-sufficiency from the operation of BRAC–AFG remained the lowest (Table 12).

Table 12: Comparison of financial performance of MFIs in the south asian countries

Element	Benchmark					
	BRAC	BRAC–AFG	BRAC–LKA	JBS	NRSP	SKDRDP
	Bangladesh	Afghanistan	Sri Lanka	Nepal	Pakistan	India
Return on assets	0.0376	-0.0274	0.0191	0.0466	0.0270	0.0132
Return on equity	0.1503	-2.1963	0.1905	0.5307	0.1762	0.3742
Operational self-sufficiency	1.1806	0.9048	1.1396	1.3080	1.1276	1.1162

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2. Financing structure of MFIs

4.2.1. Financing structure of BRAC

Table 13 shows the financing structure allocation of BRAC of Bangladesh from 2008 to 2012. The results from data analysis indicate both upward and downward fluctuations in every indicator over the inclusive years. Therefore, the study has determined the average values for capital to asset ratio, debt to equity ratio, deposits to loans, deposits to total assets, and gross loan portfolio to total assets to be

0.2568, 2.95, 0.4138, 0.3879, and 0.9388, respectively. Although the annual values for capital to assets ratio, deposits to loans, and deposits to total assets have declined after 2010, an accretive trend has been recorded at the end of 2012. Similarly, both debt to equity ratio and gross loan portfolio to total assets showed a decline in their values from 2008 to 2012.

Table 13: Financing structure allocation of BRAC

Element	Year					Average
	2008	2009	2010	2011	2012	
Capital to asset ratio	0.2098	0.2394	0.2755	0.2684	0.2907	0.2568
Debt to equity ratio	3.77	3.18	2.63	2.73	2.44	2.95
Deposits to loans	0.3518	0.4193	0.4575	0.4249	0.4154	0.4138
Deposits to total assets	0.3386	0.3826	0.4158	0.4065	0.3962	0.3879
Gross loan portfolio to total assets	0.9622	0.9125	0.9088	0.9566	0.9538	0.9388

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.2. Financing structure of BRAC–AFG

The financing structure allocation of BRAC–AFG of Afghanistan from 2008 to 2012 is shown in Table 14. The outcome of data interpretation has revealed slight fluctuations in every indicator during the investigation period. Therefore, the study has determined the average values for capital to asset ratio, debt to equity ratio, deposits to loans, deposits to total assets, and gross loan portfolio to total assets to be 0.0415, (-812.96), 0.1587, 0.1095, and 0.7099, respectively. Although some indicators have shown an up-trend in 2009 and a decline in 2010, the performance of the majority has been progressive toward the end of 2010. This observation can be seen especially in the capital to assets and debt to equity ratios, where the indicators have started with negative values, but eventually showed positive results in 2010. Only the data from 2008 to 2010 were analyzed because of the unavailablity of 2011 and 2012 data in the Microfinance Information eXchange (MIX) market database.

Table 14: Financing structure allocation of BRAC–AFG

Element	Year			Average
	2008	2009	2010	
Capital to asset ratio	-0.0004	0.0328	0.0921	0.0415
Debt to equity ratio	-2478.24	29.52	9.85	-812.96
Deposits to loans	0.1873	0.1623	0.1264	0.1587
Deposits to total assets	0.0988	0.1235	0.1063	0.1095
Gross loan portfolio to total assets	0.5277	0.7610	0.8411	0.7099

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.3. Financing structure of BRAC–LKA

The allocation of financing structure of BRAC–LKA of Sri Lanka from 2008 to 2012 is exhibited in Table 15. Data analysis has found trivial fluctuations in every indicator over the investigation period. However, the trends showed progressive results toward the end. The study has therefore determined the average values for capital to asset ratio, debt to equity ratio, deposits to loans, deposits to total assets, and gross loan portfolio to total assets for BRAC–LKA to be 0.2945, (-0.96), 0.1693, 0.1360, and 0.8321, respectively. All indicators have gained higher values in 2012 compared with those during the starting year except for deposits to loans and deposits to total assets because of unavailable values for these indicators from the source. However, BRAC–LKA has achieved a remarkable performance in capital to asset and debt to equity ratios: from negative values in 2008, the values increased to 0.4674 for capital to asset ratio and 1.14 for debt to equity ratio in 2012.

Table 15: Financing structure allocation of BRAC–LKA

Element	Year					Average
	2008	2009	2010	2011	2012	
Capital to asset ratio	-0.0988	0.3601	0.3661	0.3778	0.4674	0.2945
Debt to equity ratio	-11.12	1.78	1.73	1.65	1.14	-0.96
Deposits to loans	0.1536	0.2158	0.2727	0.2045	-	0.2117
Deposits to total assets	0.1303	0.1565	0.2056	0.1875	-	0.1700
Gross loan portfolio to total assets	0.8483	0.7252	0.7538	0.9172	0.9159	0.8321

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.4. Financing structure of JBS

Table 16 delineates the allocation of financing structure of JBS of Nepal from 2008 to 2012. Results of data analysis have revealed slight fluctuations in every indicator over the duration of the investigation. Therefore, the study has determined the average values for capital to asset ratio, debt to

equity ratio, deposits to loans, deposits to total assets, and gross loan portfolio to total assets to be 0.0963, 9.67, 0.4240, 0.3506, and 0.8236, respectively. From 2008 to 2011, capital to asset ratio, deposits to loans, deposits to total assets, and gross loan portfolio to total assets have shown an increasing trend, and remained higher in 2011 than in 2008. Only the debt to equity ratio has shown a continuous decline from 2008 to the end of the investigation period. Data for the year 2012 were omitted because they are unavailable in the source database. Data from 2008 to 2011 are presented in the table below.

Table 16: Financing structure allocation of JBS

Element	Year				Average
	2008	2009	2010	2011	
Capital to asset ratio	0.0810	0.0815	0.1046	0.1179	0.0963
Debt to equity ratio	11.35	11.28	8.56	7.48	9.67
Deposits to loans	0.3438	0.3886	0.4331	0.5303	0.4240
Deposits to total assets	0.2883	0.2850	0.3755	0.4534	0.3506
Gross loan portfolio to total assets	0.8388	0.7334	0.8670	0.8550	0.8236

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.5. Financing structure of NRSP

The financing structure allocation of NRSP of Pakistan from 2008 to 2012 is shown in Table 17. Findings from this data experiment have indicated slight upward and downward fluctuations for gross loan portfolio to total assets, a progressive trend for capital to asset ratio, and a decline in debt to equity ratio. Data for both deposits to loans and deposits to total assets were unavailable in the source database. Hence, the study has to determine the average values for capital to asset ratio, debt to equity ratio, and gross loan portfolio to total assets (0.1627, 5.29, and 0.6567, respectively). Moreover, we only analyzed the data from 2008 to 2011 because of the lack of data for 2012 in the source database.

Table 17: Financing structure allocation of NRSP

Element	Year				Average
	2008	2009	2010	2011	
Capital to asset ratio	0.1401	0.1427	0.1652	0.2026	0.1627
Debt to equity ratio	6.14	6.01	5.05	3.94	5.29
Deposits to loans	0	0	0	0	0
Deposits to total assets	0	0	0	0	0
Gross loan portfolio to total assets	0.7716	0.8078	0.4250	0.6225	0.6567

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.6. Financing structure of SKDRDP

Table 18 depicts the financing structure allocation of SKDRDP of India from 2008 to 2012. The interpretation of data has revealed minimal upward and downward fluctuations in capital to asset ratio, debt to equity ratio, and gross loan portfolio to total assets over the investigation period. The average values for capital to asset ratio, debt to equity ratio, and gross loan portfolio to total assets were determined to be 0.0340, 30.94, and 0.8557, respectively. However, data were not available for both deposits to loans and deposits to total assets from the source database.

Table 18: Financing structure allocation of SKDRDP

Element	Year					Average
	2008	2009	2010	2011	2012	
Capital to asset ratio	0.0360	0.0478	0.0226	0.0240	0.0397	0.0340
Debt to equity ratio	26.76	19.91	43.17	40.65	24.20	30.94
Deposits to loans	0	0	0	0	0	0
Deposits to total assets	0	0	0	0	0	0
Gross loan portfolio to total assets	0.8241	0.8261	0.8751	0.8946	0.8586	0.8557

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.2.7. Comparison of financing structure of MFIs in South Asian region

The results from the comparison of financing structures have shown that BRAC–LKA of Sri Lanka has the highest percentage of capital to asset ratio (29.45%) compared with other MFIs in the selected South Asian countries, followed by BRAC of Bangladesh (25.68%) and NRSP of Pakistan (16.27%). The percentages of the other three MFIs are within the range of 3% to 10%, whereas SKDRDP of India has the lowest capital to asset ratio percentage at 3.40%. The lowest debt to equity ratio was (-812.96%) for BRAC–AFG, followed by (-0.96%) for BRAC–LKA. By contrast, the highest debt to equity ratio was 30.94% for SKDRDP. The

percentages for BRAC, JBS, and NRSP remained at 2.95%, 9.67%, and 5.29%, respectively. In addition, JBS ranked first in terms of deposits to loans with 42.40%, followed by BRAC with 41.38%. Conversely, BRAC ranked first in deposits to total assets with 38.79%, followed by JBS with 35.06%. In both cases, BRAC–AFG and BRAC–LKA have fallen in the range of 10% to 20%. No data were found from the source for NRSP and SKDRDP for both deposits to loans and deposits to total assets. Furthermore, four out of six MFIs showed significant performance as evidenced by the higher than 80% gross loan portfolio to total assets, whereas the other two have fallen in the range of 65% to 75%. Hence, the highest percentage of gross loan portfolio to total assets was achieved by BRAC at 93.88%, and the lowest was attained by NRSP at 65.67%.

Table 19: Comparison of financing structure of MFIs in the South Asian countries

Element	Benchmark (%)					
	BRAC	BRAC–AFG	BRAC–LKA	JBS	NRSP	SKDRDP
	Bangladesh	Afghanistan	Sri Lanka	Nepal	Pakistan	India
Capital to asset ratio	25.68	4.15	29.45	9.63	16.27	3.40
Debt to equity ratio	2.95	-812.96	-0.96	9.67	5.29	30.94
Deposits to loans	41.38	15.87	21.17	42.40	0	0
Deposits to total assets	38.79	10.95	17.00	35.06	0	0
Gross loan portfolio to total assets	93.88	70.99	83.21	82.36	65.67	85.57

Source: Author's calculation based on data from Microfinance Information Exchange, Inc. (MIX, 2014)

4.3. Regression result of financial performance

The study found that the estimated results from a multiple regression analysis are in the satisfactory level, where the adjusted R^2 is 0.437 and the observed R^2 value is 0.553. The value of the adjusted R^2 revealed stable relationships among the dependent and independent variables, where all independent variables are able to explain approximately 43.7% of the financial self-sufficiencies. Additionally, the ANOVA table reflected the goodness of the model, and the results of the F-test estimated that the regression is meaningful in the sense that the dependent variable is related to every specific explanatory variable. The linear relationship of the model is highly significant, where the value of the F statistics is 4.747, which is within the accepted range. Furthermore, the result from this model confirmed that no multicollinearity problem is present, and that the independent variables are highly related to one another. This study also employed the technique of collinearity diagnostics in eliminating the problem of the multicollinearity. In addition, the study found the Durbin-Watson value at 2.211, which also falls within the accepted range. Further, the linear relationship of the model is highly significant, where the p value for the F is less than 0.005%. The estimated coefficient of the model also denoted that most of the variables, which are significantly different than zero, are significantly related at the 0.01 and 0.05 levels.

The regression result also revealed that Yield on Gross loan Portfolio (YIELD) and Number of Active Borrowers (NAB) have been positively explained at a significant level of the FSS of MFIs in the South Asian region. Moreover, the Liquidity Ratio (LR) of selected MFIs has shown a positive, but insignificant effect on FSS. In addition, Ages and Operating Expense Ratio (OER) have a negatively significant effect on the FSS of MFIs in South Asia. Cost per Borrower (CPB) also has a negative, but insignificant effect on the FSS of MFIs in the selected South Asian countries. Overall, the ANOVA analysis for the study has rendered the results as significant and satisfactory.

Table 20: Regression result of financial performance of MFIs

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.258	.234		5.368	.000		
	Ages	-.014**	.007	-.929	-2.151	.042	.104	9.597
	CPB	-.002	.003	-.187	-.724	.476	.293	3.416
	LR	.103	.150	.123	.685	.500	.601	1.664
	NAB	7.166E-8**	.000	.776	2.266	.033	.165	6.046
	OER	-2.867***	.909	-1.279	-3.152	.004	.118	8.472
	YIELD	1.967**	.808	.791	2.433	.023	.184	5.437
R Square				.553				
Adjusted R Square				.437				
F				4.747				
Durbin-Watson				2.211				

*** Significant at 1%; ** Significant at 5%

5. Conclusion and recommendations

The study has conducted to measure and compare the financial performance of microfinance institutions operating in South Asian countries to

gauge their levels of financial performance. The study has shown that YIELD and NAB have a positively significant effect, whereas Age and OER has negatively significant effects on the profitability of MFIs in South Asia. Moreover, LR has shown an insignificantly positive effect, whereas CPB has exerted an insignificantly negative effect on the FSS of MFIs in the region. Therefore, microfinance institutions in South Asia should first minimize all of their operating costs and expenditures per borrower if they intend to be operationally efficient in the market. This is the precondition to achieve profitability. However, this technique should be performed without losing any active borrowers (clients) and without reducing the loan portfolio.

Furthermore, the comparative analysis of the financial performance of MFIs in South Asia reveals that out of six selected MFIs in this region, five have a positive Return on Assets and Return on Equities, which enable them to be financially sustainable in their operations. These NGOs are BRAC (Bangladesh), BRAC–LKA (Sri Lanka), JBS (Nepal), NRSP (Pakistan), and SKDRDP (India). In addition, based on the overall comparison conducted, we conclude that JBS is the most financially sustainable and profitable microfinance institute among the selected MFIs. Conversely, BRAC Afghanistan is the least financially sustainable among the selected MFIs of the South Asian region. However the MFIs of the South Asian region have managed to maintain positive Operational self-sufficiency values in the market. This study therefore recommends reconsidering the interest rate charged by MFIs as this is one of the major barrier for client's loan repayment. MFIs should also maintain close relationship with borrower to keep them active, for instead, institutions can provide deposits or sevings scheme for clients. However, some countries might have regulatory framework that unauthorized deposits service from borrowers, such as Indian government passed parliamentary leg illation that don't allow Indian MFIs to take deposits from borrowers.

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